

ABSTRACT

A water-soluble reference standard is useful for immunoassays of a lipophilic drugs. The reference standard is a compound of formula (I):



where G is a lipophilic drug; L is a linker which is an alkyl group or heteroalkyl group containing from 1 to 20 carbon atoms; n is 0 or 1; and Y is a water-solubilizing group such as $-\text{SO}_3^-$, $-\text{NR}-\text{SO}_3^-$, $-\text{P}(=\text{O})(\text{OH})(\text{O}^-)$, or $-\text{O}-\text{P}(=\text{O})(\text{OH})(\text{O}^-)$; where R is H or an alkyl group of 1 to 10 carbon atoms.